

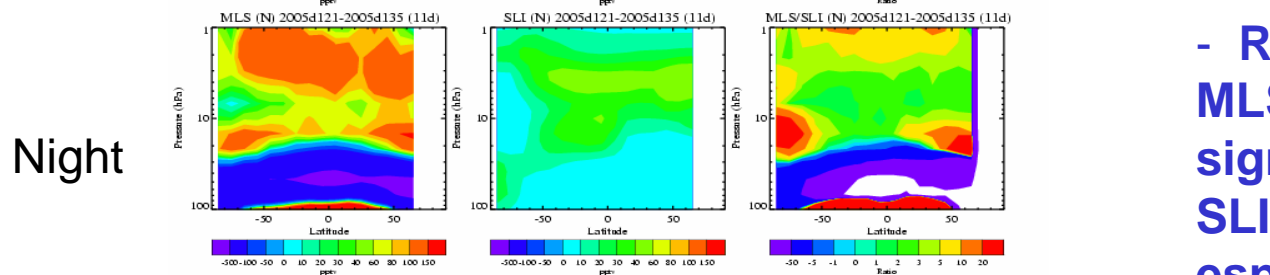
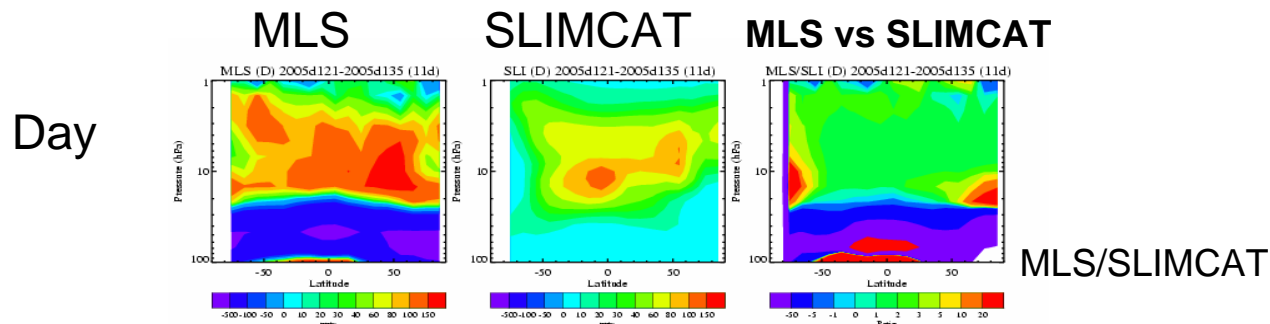
Status of HOCl observations from MLS + a few comparisons

- **HOCl has lines in the 640 GHz region measured by one of the MLS radiometers.**
- **It is a weak signal, needing many days of zonal mean averages for useful retrieval (~1 to 2 weeks).**
- **Preliminary results shown here for status, caveats, & simple comparison versus balloon datasets from Ft. Sumner 2004.**

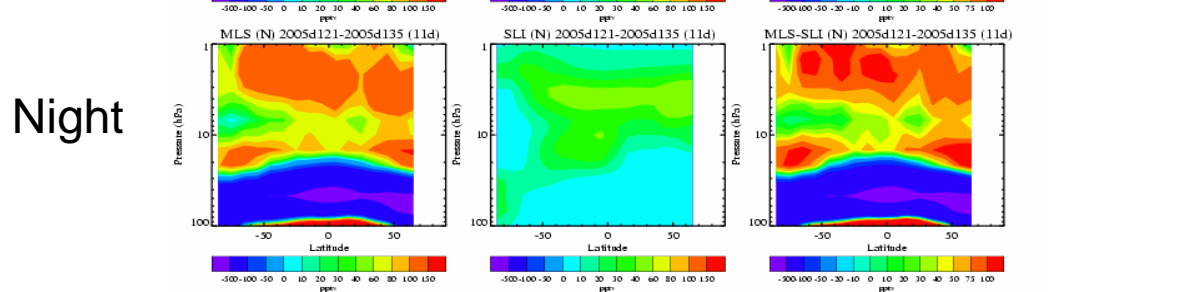
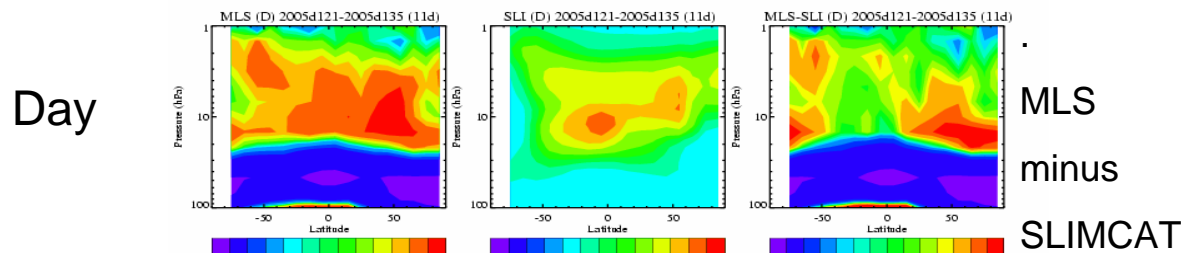
HOCl: 11 days d121-d132, May 1- May12 (2005)

as example of MLS data averages and similar time period for SLIMCAT model runs.

Zonal means 100-1 hPa but not good below ~22 hPa (large oscillations).

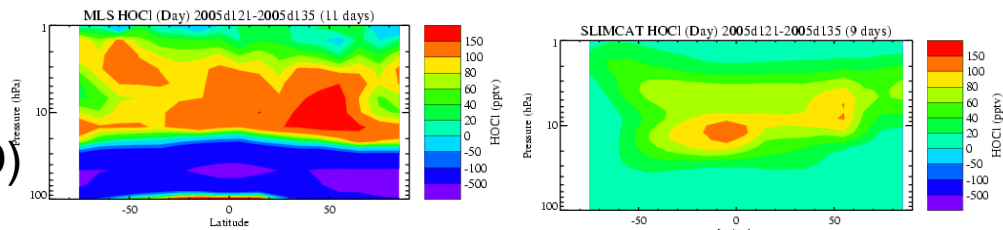


- Ratio and diffs. show that
MLS HOCl values are
significantly larger than
SLIMCAT estimates,
especially in mid-low strat.
at high latitudes.

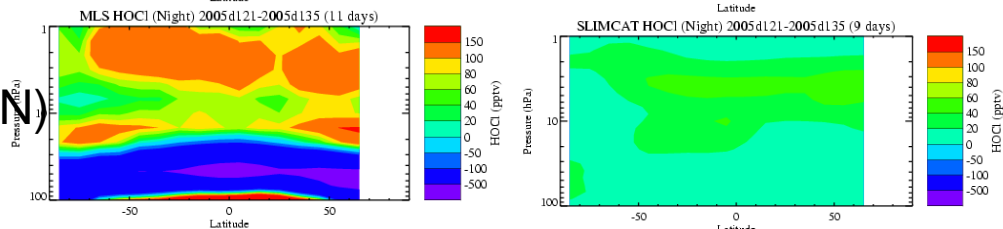


- This is true for both day
and night values

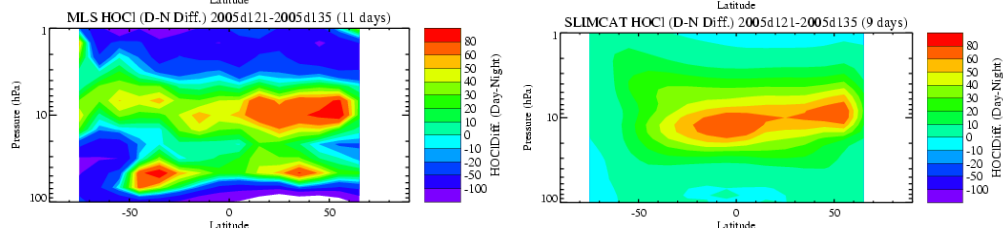
May
1-15
Day (D)



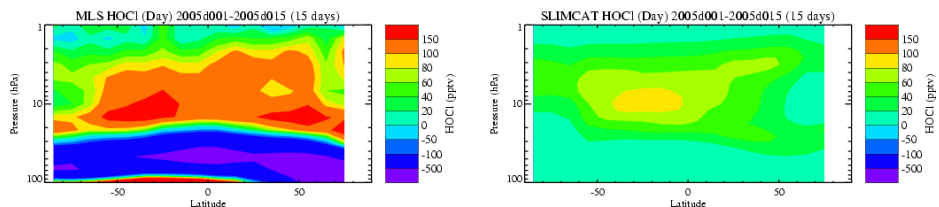
Night (N)



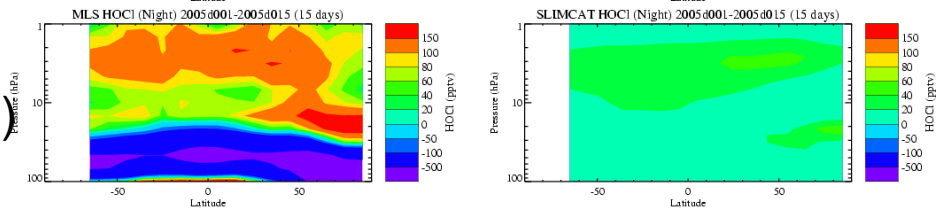
D - N



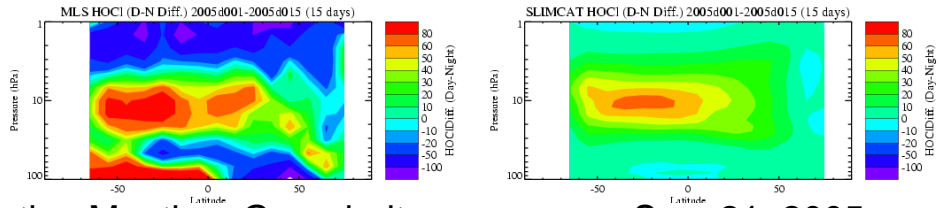
Jan.
1-15
Day (D)



Night (N)



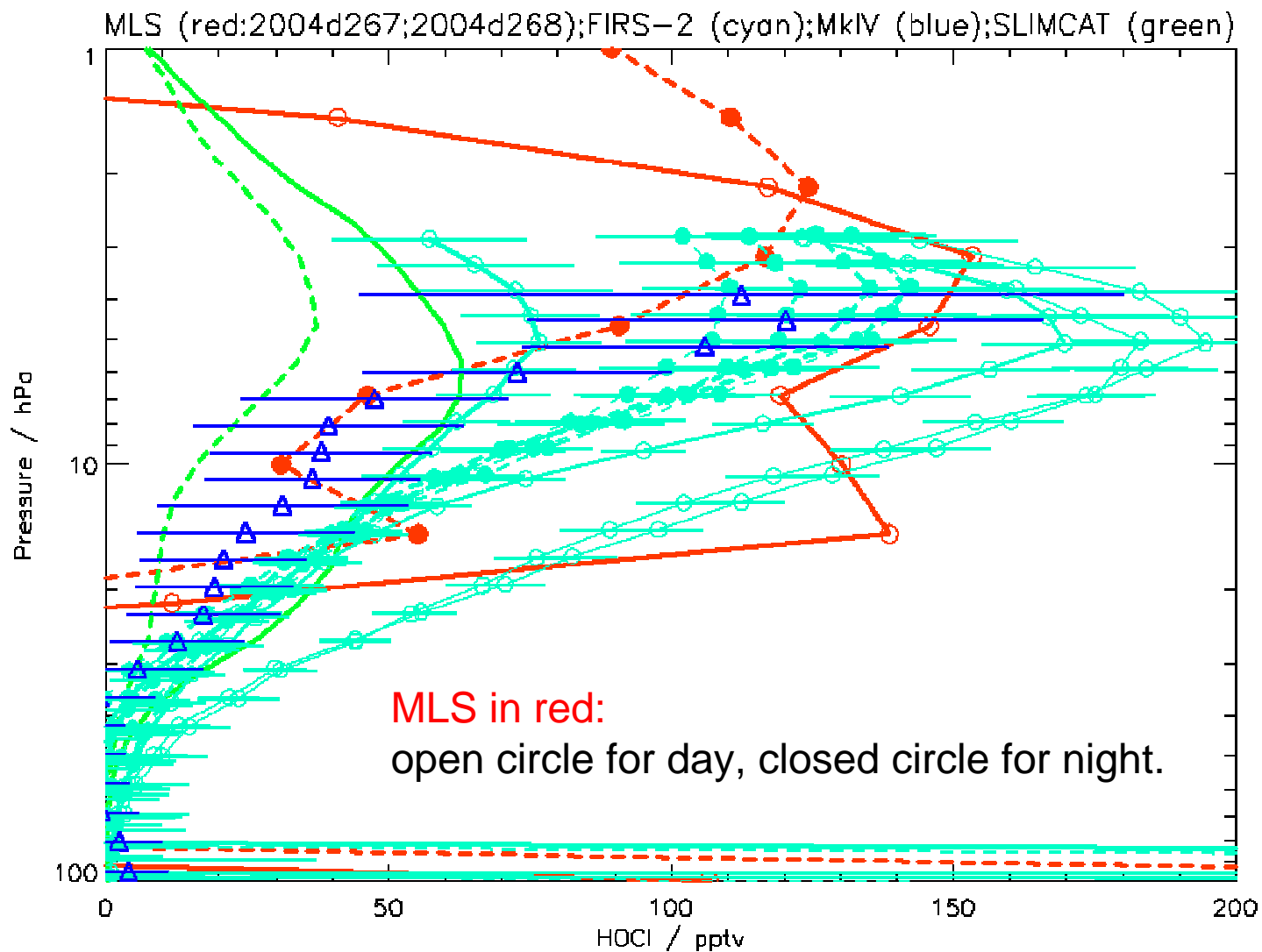
D - N



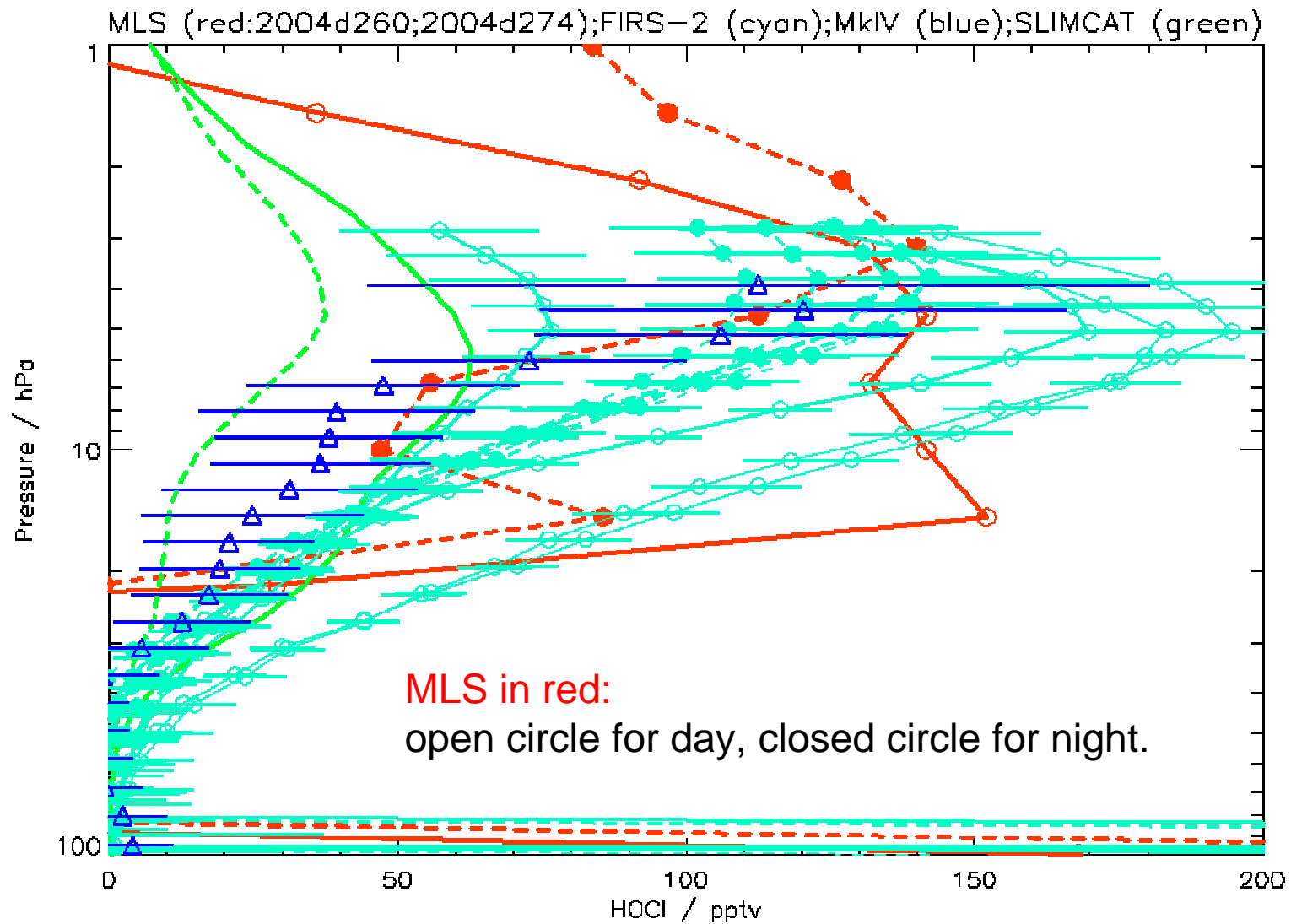
HOCl: Time evolution (2-week zonal means for early January to early May) shows that there is an expected (SLIMCAT) latitudinal shift from Jan. (bottom 6 panels) to May (top 6 panels).

This shift seems tied to the sun and it does appear qualitatively in the MLS data - maybe most easily seen in the Day-Night values, which resemble SLIMCAT to some extent.

Comparisons for Ft. Sumner 2004 Sep. days [2-day average] (preliminary)



Comparisons for Ft. Sumner 2004 Sep. days [15-day average] (preliminary)



- Summary or HOCl

> First-order behavior seems 'OK' for $P < \sim 22$ hPa.

➤ Retrieve 50-150 pptv, often with more during the day than at night. Some day-night changes from month to month seem to be (crudely) reflected in SLIMCAT model.

➤ Balloon comparisons give very rough 'agreement', but would like to do better.

> There is a provisional release for the HOCl product, but it has caveats because it needs more work in the retrievals (& to eliminate obvious artifacts below ~ 22 hPa).

- Future work (fairly low priority)

➤ Check different retrieval method, such as averaging radiances before the retrieval (e.g., this seems to help HCN and BrO - off-line work); should be able to improve this product.

➤ More modeling efforts, constrained by other MLS data.